

Amendments to the Claims

1. (Currently amended) A radio access network comprising:

at least one antenna structure for sending and receiving signals over at least one radio frequency air interface in communication with mobile stations operating in a coverage area of a base station;

paging logic for sending page messages to mobile stations via the antenna structure, wherein, for a given mobile station, the paging logic is arranged (i) to send a page message to the given mobile station on a paging channel slot that the given mobile station is set to monitor, (ii) to wait up to a time interval for a response from the given mobile station and, (iii) absent receipt of a response from the given mobile station by expiration of the time interval, to re-page the given mobile station on a next ~~time~~ paging channel time slot that the given mobile station is set to monitor; and

interval-selection logic for selecting the time interval based on a paging slot cycle index of the given mobile station.

2. (Currently amended) The radio access network of claim 1, wherein:

the interval-selection logic is arranged to select a first time interval if the given mobile station is operating at a first slot cycle index; and

the interval-selection logic is arranged to select a second time interval shorter than the first time interval if the given mobile station is operating at a second slot cycle index smaller than the first slot cycle index.

3. (Original) The radio access network of claim 1, further comprising a base station controller, wherein the base station controller applies the paging logic and the interval-selection logic.

4. (Original) The radio access network of claim 1, further comprising a mobile switching center, wherein the mobile switching center applies the paging logic and the interval-selection logic.

5. (Currently amended) The radio access network of claim 1, wherein the interval-selection logic operates dynamically to select the time interval when the radio access network is paging the given mobile station.

6. (Currently amended) The radio access network of claim 1, wherein the interval-selection logic operates to select the time interval for the given mobile station after a determination is made of what slot cycle index will be used for paging the given mobile station.

7. (Currently amended) The radio access network of claim ~~[[1]]~~ 2, wherein:
the first slot cycle index is 2 and the second slot cycle is 0.

8. (Currently amended) The radio access network of claim 1, further comprising:
a processor;
data storage; and

machine language instructions stored in the data storage and executable by the processor,
the machine language instructions defining the paging logic and the interval-selection logic.

9. (Currently amended) The radio access network of claim 1, wherein the given
mobile station is a cellular telephone.

10. (Original) A method comprising:
using a slot cycle index of a mobile station as a basis to select a failure-interval to use for
re-paging the mobile station; and
using the selected failure-interval as a basis to determine when to re-page the mobile
station.

11. (Currently amended) The method of claim 10, wherein using the slot cycle index
of [[a]] the mobile station as a basis to select a failure-interval to use for re-paging the mobile
station comprises:

if the slot cycle index is a first slot cycle index, selecting a first failure-interval; and
if the slot cycle index is a second slot cycle index smaller than the first slot cycle index,
selecting a second failure-interval shorter than the first failure-interval.

12. (Original) The method of claim 11, wherein the first slot cycle index is 2 and
the second slot cycle index is 0.

13. (Original) The method of claim 10, wherein using the selected failure-interval as a basis to determine when to re-page the mobile station comprises:

waiting for expiration of the failure-interval; and

upon expiration of the failure-interval, re-paging the mobile station at a next timeslot commensurate with the slot cycle index of the mobile station.

14. (Original) A method comprising:

receiving a signal indicative of an incoming communication for a first mobile station;

determining a first slot cycle index under which the first mobile station operates;

paging the first mobile station on a paging channel slot commensurate with the first slot cycle index;

waiting a first interval to receive a page response from the first mobile station, and making a first determination, upon expiration of the first interval, that a page failure has occurred;

responsive to the first determination, re-paging the first mobile station on a next paging channel slot commensurate with the first slot cycle index;

receiving a signal indicative of an incoming communication for a second mobile station;

determining a second slot cycle index under which the second mobile station operates, wherein the second slot cycle is different than the first slot cycle index;

paging the second mobile station on a paging channel slot commensurate with the second slot cycle index;

waiting a second interval to receive a page response from the second mobile station, and making a second determination, upon expiration of the second interval, that a page failure has occurred, wherein the second interval is different than the first interval; and

responsive to the second determination, re-paging the second mobile station on a next paging channel slot commensurate with the second slot cycle index.

15. (Original) The method of claim 14, further comprising:
selecting the first interval based on the first slot cycle index; and
selecting the second interval based on the second slot cycle index.

16. (Original) The method of claim 15, further comprising:
selecting the first interval when paging the first mobile station; and
selecting the second interval when paging the second mobile station.

17. (Original) The method of claim 15, wherein:
the first slot cycle index is smaller than the second slot cycle index; and
the first interval is shorter than the second interval.